CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2017-03-27-09** **Date: 29-03-17**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.

Agency : Technical Manager (west), KRIDL, Bangalore

Customer's Reference : EE(Project)/Ynk Zone/WO/37/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 27-03-17

Sample ID No : 2017-03-27-09-01

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6

Date of test : 28-03-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.45	–
2	Finess by Air permeablity method (m^2/kg, Min)	287.4	225m^2/kg, Min
3	Density (gm/cc)	3.1	–
4	Standard Consistency (%)	27.5%	Not specified
5	Initial Setting time	150 minutes	Not less than 30 minutes
6	Final Setting time	250 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.
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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

CIVIL Pro Sig..... Date..... BANGALORE

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-03-27-09** **Date: 25-04-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.
Agency	:	Technical Manager (west), KRIDL, Bangalore
Customer's Reference	:	EE(Project)/Ynk Zone/WO/37/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	27-03-17
Sample ID No	:	2017-03-27-09-01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	28-03-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

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Project Division
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Bangalore

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Authorized Signatory
Quality Manager

****End of Report****

CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-03-27-09** **Date: 30-03-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.
Agency	:	Technical Manager (west), KRIDL, Bangalore
Customer's Reference	:	EE(Project)/Ynk Zone/WO/37/2016-17
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	27-03-17
Sample ID No	:	2017-03-27-09-02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	27-03-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	245	245	1.6	98.4	90-100
3	20 mm	5644	5889	39.3	60.7	30-70
4	10 mm	4566	10455	69.7	30.3	10-35
5	4.75 mm	4288	14743	98.3	1.7	0-5
6	Pan	257	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-03-27-09** **Date: 30-03-17**

Sample ID No : 2017-03-27-09-02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.3	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.4	
3	Specific Gravity	2.69	–
4	Bulk Density(Loose) (Kg/l)	1.56	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.21	–

Note:

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Authorized Signatory
Quality Manager

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

****End of Report****

CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-03-27-09** **Date: 30-03-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.
Agency	:	Technical Manager (west), KRIDL, Bangalore
Customer Reference	:	EE(Project)/Ynk Zone/WO/37/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	27-03-17
Sample ID No	:	2017-03-27-09-02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	27-03-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	256	256	5.1	94.9	90-100
3	10 mm	2456	2712	54.2	45.8	25-55
4	4.75 mm	1889	4601	92.0	8.0	0-10
5	Pan	399	5000	100	0	–

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Bangalore

CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-03-27-09**

Sample ID No : 2017-03-27-09-02(b) **Date: 30-03-17**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	14.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	13.7	
3	Specific Gravity	2.68	–
4	Bulk Density(Loose) (Kg/l)	1.52	–
5	Bulk Density(Compacted) (Kg/l)	1.55	–
6	Water Absorption(%)	0.23	–
7	Aggregate crushing Value(%)	23.4	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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R KARTHIK RECHAN
Authorized Signature
Quality Manager

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

End of Report

CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-03-27-09** **Date: 30-03-17**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.

Agency : Technical Manager (west), KRIDL, Bangalore

Customer's Reference : EE(Project)/Ynk Zone/WO/37/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 27-03-17

Sample ID No : 2017-03-27-09-03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 27-03-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	86	86	8.6	91.4	90-100	90-100	90-100	95-100
3	2.36 mm	156	242	24.2	75.8	60-95	75-100	85-100	95-100
4	1.18 mm	166	408	40.8	59.2	30-70	55-90	75-100	90-100
5	600 micron	178	586	58.6	41.4	15-34	35-59	60-79	80-100
6	300 micron	185	771	77.1	22.9	5-20	8-30	12-40	15-50
7	150 micron	156	927	92.7	7.3	0-10	0-10	0-10	0-15
8	Pan	73	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-03-27-09**

Sample ID No : 2017-03-27-09-03

Date: 30-03-17

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.8	–
2	Specific Gravity	2.56	–
3	Material finer than 75 micron(%)	4.6	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Authorized Signatory
Quality Manager

****End of Report****

CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2017-03-27-09**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore. **Date: 30-03-17**
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing and Fixing Play and Gym Equipments in Yelahanka New Town, 5th phase in ward no.02.
Agency	:	Technical Manager (west), KRIDL, Bangalore
Customer's Reference	:	EE(Project)/Ynk Zone/WO/37/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	27-03-17
Sample ID No	:	2017-03-27-09-04
Sample Type/Size	:	Solid concrete blocks of size (400X200X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex - C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	27-03-17

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185 (Part 1):2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	400	200	200	16000	33.560	2097.5	2052.9	Not less than 1800Kg/m^3
2	401	201	200	16120	32.650	2025.4		
3	401	201	201	16201	32.980	2035.7		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185 (Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	34.590	33.100	4.50	4.57	Shall not be more than 10% by mass
2	35.430	33.980	4.27		
3	34.450	32.830	4.93		

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Bangalore

Lab ID : **CP-2017-03-27-09**

Sample ID No : **2017-03-27-09-04**

Date: 30-03-17

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	401	202	202	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	402	201	201	
3	402	201	200	
4	401	200	201	
5	403	200	201	
6	401	201	201	
7	401	202	202	
8	400	201	200	
9	401	201	202	
10	401	202	200	
11	401	202	201	
12	400	201	201	
13	400	202	203	
14	401	203	201	
15	402	204	200	
16	402	201	201	
17	401	202	201	
18	402	202	200	
19	401	201	200	
20	401	200	201	
Average of 20	**401**	**201**	**201**	

Asst. Executive Engineer
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